(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 16 June 2005 (16.06.2005)

PCT

(10) International Publication Number WO 2005/054241 A2

(51) International Patent Classification⁷: A61K 31/437

C07D 471/04,

(21) International Application Number:

PCT/GB2004/005004

(22) International Filing Date:

26 November 2004 (26.11.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0327524.5

26 November 2003 (26.11.2003) GB

(71) Applicant (for all designated States except US): THE UNIVERSITY COURT OF THE UNIVERSITY OF GLASGOW [GB/GB]; Gilbert Scott Building, University Avenue, Glasgow Aberdeenshire G12 8QQ (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): PARENTY, Alexis [GB/GB]; 22 Cecil Street, Glasgow Aberdeenshire G12 8RH (GB). CRONIN, Leroy [GB/GB]; The Waltry New Lodge, 67 Antermony Road, Milton of Campsie, East Dunbartonshire Aberdeenshire G66 8AA (GB). BROWN, Robert [GB/GB]; 22 Allan Road, Killearn G63 9QE (GB).

- (74) Agents: KIDDLE, Simon et al.; Mewburn Ellis LLP, York House, 23 Kingsway, London Greater London WC2B 6HP (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HETEROCYCLIC AROMATIC COMPOUNDS

(57) Abstract: New classes of heterocyclic aromatic cationic compounds are disclosed, and in particular new classes of phenanthridinium derivatives, most notably dihydro-imidazo-phenanthridinium (DIP) compounds. These findings are based on the reaction of the middle b ring of a phenanthridinium core with primary amines to form DIP compounds (Formula A) or secondary amines to form 2-aminoalkyl phenanthridinium derivatives (Formula B). These reactions can also be applied to other classes of starting compounds which comprise a 6-membered ring aromatic heterocycle having a ring nitrogen and at least one alpha hydrogen atom which can be reacted with a primary or secondary amine.

